

CLAIMS

1. A glass flake, comprising a glass composition, the glass composition comprising a transition metal oxide and allowing the glass flake to have a visible-light transmittance of 85% or lower measured with an *A* light source when the glass flake has a thickness of 15 μm .
2. The glass flake according to claim 1, wherein the glass composition further comprises SiO_2 and an alkali metal oxide, and comprises more than 10 mass% of the transition metal oxide.
3. The glass flake according to claim 2, wherein the glass composition comprises the following components, expressed in mass%:

$20 \leq \text{SiO}_2 \leq 70$;

15 $10 < \text{T-Fe}_2\text{O}_3 \leq 50$; and

$5 \leq (\text{Li}_2\text{O} + \text{Na}_2\text{O} + \text{K}_2\text{O}) \leq 50$,

where the $\text{T-Fe}_2\text{O}_3$ denotes Fe_2O_3 whose amount is calculated from the total content of iron contained in the glass composition.
- 20 4. The glass flake according to claim 1, wherein the glass composition further comprises SiO_2 and an alkaline-earth metal oxide, and comprises more than 10 mass% of the transition metal oxide.
5. The glass flake according to claim 4, wherein the glass composition comprises the following components, expressed in mass%:

$20 \leq \text{SiO}_2 \leq 70$;

25 $10 < \text{T-Fe}_2\text{O}_3 \leq 50$; and

$5 \leq (\text{MgO} + \text{CaO} + \text{SrO}) \leq 50$,

where the $\text{T-Fe}_2\text{O}_3$ denotes Fe_2O_3 whose amount is calculated from the total content of iron contained in the glass composition.
- 30 6. The glass flake according to claim 1, wherein the glass composition further comprises SiO_2 , an alkali metal oxide, and an alkaline-earth metal oxide, and comprises more than 10 mass% of the transition metal oxide.
- 35 7. The glass flake according to claim 6, wherein the glass composition comprises the following components, expressed in mass%:

20 $\leq \text{SiO}_2 \leq 70$;
10 $< \text{T-Fe}_2\text{O}_3 \leq 50$;
 $0 < (\text{Li}_2\text{O} + \text{Na}_2\text{O} + \text{K}_2\text{O}) < 50$;
 $0 < (\text{MgO} + \text{CaO} + \text{SrO}) < 50$; and
5 $5 \leq (\text{Li}_2\text{O} + \text{Na}_2\text{O} + \text{K}_2\text{O} + \text{MgO} + \text{CaO} + \text{SrO}) \leq 50$,
where the $\text{T-Fe}_2\text{O}_3$ denotes Fe_2O_3 whose amount is calculated from
the total content of iron contained in the glass composition.

8. The glass flake according to claim 1, further comprising metal oxide
10 crystals that contain Fe as a constituent atom.

9. The glass flake according to claim 8, wherein the metal oxide crystals
comprise at least one selected from Fe_2O_3 and Fe_3O_4 .

15 10. The glass flake according to claim 1, wherein the glass composition
comprises an oxide of Fe as the transition metal oxide, and the Fe satisfies a
formula of $0.05 \leq \text{Fe}^{2+} / (\text{Fe}^{2+} + \text{Fe}^{3+}) < 1.00$.

20 11. The glass flake according to claim 10, wherein the Fe satisfies a
formula of $0.10 \leq \text{Fe}^{2+} / (\text{Fe}^{2+} + \text{Fe}^{3+}) \leq 0.80$.

12. The glass flake according to claim 1, further comprising a coating film
that is formed on a surface of the glass flake and contains at least one
selected from a metal and a metal oxide.

25 13. The glass flake according to claim 12, wherein the metal is at least
one selected from the group consisting of nickel, gold, silver, platinum, and
palladium.

30 14. The glass flake according to claim 12, wherein the metal oxide is an
oxide of at least one selected from the group consisting of titanium, aluminum,
iron, cobalt, chromium, zirconium, zinc, and tin.

15. A resin composition comprising a glass flake according to claim 1.

35 16. A paint comprising a glass flake according to claim 1.

17. A cosmetic product comprising a glass flake according to claim 1.
18. A method of manufacturing a glass flake, comprising heat-treating a glass flake containing Fe to change a valence of at least part of the Fe and thereby to vary color tone of the glass flake.
5
19. A method of manufacturing a glass flake, comprising heat-treating a glass flake containing Fe to form oxide crystals of the Fe in the glass flake.
- 10 20. The method of manufacturing a glass flake according to claim 18 or 19, wherein the heat-treating is carried out in an atmosphere where the Fe is to be oxidized or reduced.
- 15 21. The method of manufacturing a glass flake according to claim 18 or 19, wherein the heat-treating includes a first heat treatment and a second heat treatment that are carried out sequentially, the first heat treatment being carried out in an atmosphere where the Fe is to be oxidized and the second heat treatment being carried out in an atmosphere where the Fe is to be reduced.